This listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

Claim 1. (currently amended) A microfluidic method comprising:

delivering first and second fluids to a lumen of a microfluidic device such that the first and second fluids flow adjacent to each other within the lumen without mixing except for diffusion at an interface between the first and second fluids, wherein the first fluid is different than the second fluid and the composition of at least one of the first and second fluids varies over time as it is delivered to the lumen so that the fluid forms a gradient with regard to a concentration of at least one component of the fluid that changes along a length of the lumen.

Claim 2. (canceled)

Claim 3. (original) A microfluidic method according to claim 1 wherein the microfluidic device comprises a plurality of lumens, the method comprising delivering first and second fluids to each of the plurality of lumens.

Claim 4. (original) A microfluidic method according to claim 1 wherein the same first and second fluids are delivered to each of the plurality of lumens.

Claim 5. (original) A microfluidic method according to claim 1 wherein different first and second fluids are delivered to the different lumens of the plurality of lumens.

Claim 6. (original) A microfluidic method according to claim 1 wherein the lumen has a cross sectional diameter of less than 2.5 mm.

Claim 7. (original) A microfluidic method according to claim 1 wherein the lumen has a cross sectional diameter of less than 1 mm.

Claim 8. (original) A microfluidic method according to claim 1 wherein the lumen has a cross sectional diameter of less than 500 microns.

Claim 9. (original) A microfluidic method according to claim 1 wherein the first and second fluids combine to form different crystallization conditions for crystallizing a molecule.

Claim 10. (original) A microfluidic method according to claim 1 wherein the first and second fluids combine to form different crystallization conditions for crystallizing a protein.

Claim 11. (original) A microfluidic method according to claim 1 wherein the first and second fluids combine to form different crystallization conditions for crystallizing a macromolecule with a molecular weight of at least 500 Daltons.

Claim 12. (original) A microfluidic method according to claim 1 wherein the first and second fluids combine to form different crystallization conditions for crystallizing a member selected from the group consisting of viruses, proteins, peptides, nucleosides, nucleotides, ribonucleic acids, deoxyribonucleic acids.

Claim 13. (original) The method according to claim 1 wherein the material to be crystallized contains at least two or more materials selected from the group consisting of viruses, proteins, peptides, nucleosides, nucleotides, ribonucleic acids, deoxyribonucleic acids, small molecules, drugs, putative drugs, inorganic compounds, metal salts, organometallic compounds and elements.

Claim 14. (original) A microfluidic method according to claim 1 wherein the first and second fluids have a same flow rate within the lumen.

Claim 15. (original) A microfluidic method according to claim 1 wherein the first and second fluids have a different flow rate within the lumen.

Claim 16. (original) A microfluidic method comprising:

delivering first and second fluids to a lumen of a microfluidic device such that the first and second fluids flow adjacent to each other within the lumen without mixing except for diffusion at an interface between the first and second fluids, wherein the first fluid is different than the second fluid and a composition of at least one of the first and second fluids delivered to

the lumen is varied so that the composition of at least one of the first and second fluids within the lumen varies along a length of the lumen.

Claim 17. (original) A microfluidic method comprising:

delivering first, second and third fluids to a lumen of a microfluidic device such that the first, second and third fluids flow adjacent to each other within the lumen without mixing except for diffusion at an interface between the first, second and third fluids, wherein the first, second and third fluids are different than each other and a composition of at least one of the first, second and third fluids delivered to the lumen is varied so that the composition of at least one of the first, second, and third fluids within the lumen varies along a length of the lumen.

Claim 18. (original) A microfluidic method according to claim 17 wherein the composition of at least one of the first, second and third fluids varies over time as it is delivered to the lumen so that the fluid forms a gradient with regard to a concentration of at least one component of the fluid that changes along a length of the lumen.

Claim 19. (original) A microfluidic method according to claim 17 wherein the microfluidic device comprises a plurality of lumens, the method comprising delivering first, second and third fluids to each of the plurality of lumens.

Claim 20. (original) A microfluidic method according to claim 17 wherein the same first, second and third fluids are delivered to each of the plurality of lumens.

Claim 21. (original) A microfluidic method according to claim 17 wherein different first, second, and third fluids are delivered to the different lumens of the plurality of lumens.

Claim 22. (original) A microfluidic method according to claim 17 wherein the lumen has a cross sectional diameter of less than 2.5 mm.

Claim 23. (original) A microfluidic method according to claim 17 wherein the lumen has a cross sectional diameter of less than 1 mm.

Claim 24. (original) A microfluidic method according to claim 17 wherein the lumen has a cross sectional diameter of less than 500 microns.

Claim 25. (original) A microfluidic method according to claim 17 wherein at least one of the first, second and third fluids have a different flow rate than another of the fluids within the lumen.

Claim 26. (original) A microfluidic method according to claim 17 wherein at least one of the first, second and third fluids have a same flow rate than another of the fluids within the lumen.

Claim 27. (original) A microfluidic method according to claim 17 wherein the first, second and third fluids combine to form different crystallization conditions.

Claim 28. (original) A microfluidic method according to claim 17 wherein the first, second and third fluids combine to form different crystallization conditions, the second fluid comprising the material to be crystallized and being positioned between the first and third fluids.

Claim 29. (original) A microfluidic method according to claim 17 wherein the first, second and third fluids combine to form different crystallization conditions for crystallizing a molecule.

Claim 30. (original) A microfluidic method according to claim 17 wherein the first, second and third fluids combine to form different crystallization conditions for crystallizing a protein.

Claim 31. (original) A microfluidic method according to claim 17 wherein the first, second and third fluids combine to form different crystallization conditions for crystallizing a macromolecule with a molecular weight of at least 500 Daltons.

Claim 32. (original) A microfluidic method according to claim 17 wherein the first, second and third fluids combine to form different crystallization conditions for crystallizing a member selected from the group consisting of viruses, proteins, peptides, nucleosides, nucleotides, ribonucleic acids, deoxyribonucleic acids.

Claim 33. (original) The method according to claim 17 wherein the material to be crystallized contains at least two or more materials selected from the group consisting of viruses, proteins, peptides, nucleosides, nucleotides, ribonucleic acids, deoxyribonucleic acids, small molecules, drugs, putative drugs, inorganic compounds, metal salts, organometallic compounds and elements.